Art. XI.—*On the Occurrence of Diprotodon australis (Owen) near Melbourne.*

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(With Plate IX.).

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A short time ago Mr. W. S. Dawson, M.C.E., of the Metropolitan Board of Works, forwarded to me a specimen for examination and identification, which had been obtained during the course of the sewerage excavations in the neighbourhood of North Melbourne. The specimen proved to be a fairly good example of portion of the lower jaw of *Diprotodon australis*, Owen, and I have to thank the above gentleman for the opportunity of examining it and of recording its discovery, with the accompanying plan of the locality.

The specimen is a fairly large fragment of the right half of the lower jaw, measuring about eight and a half inches in length, and showing portion of the incisor in its socket and indication of the four molar teeth.

The bone is moderately sound and strong, while the teeth are in rather a delapidated condition, very little of the enamel now remaining, and that much cracked and easily broken, but still there is sufficient to show some of the characteristics of the teeth, and the coarse, irregular surface wrinkling of the enamel itself. The fragment appears to have been broken before or perhaps during deposition, as some of the fractures are very ancient, but there are also a number of recent flaws and breaks evidently due to carelessness in excavation.

How much of the incisor tooth there is present it is difficult to say, as the portion still remaining is wholly within its socket; its section is somewhat oval, with its greatest diameter about one inch, and the characteristic external grooving and ridging of this

tooth is clearly shown by the impression on the walls of the socket. The lower incisor teeth of this species, as described by the late Sir Richard Owen, are indicated as being nearly straight, with a length of ten inches, two-thirds of which is lodged in socket, and a transverse breadth of one inch four lines.

The four molar teeth in the present example occupy about seven and a quarter inches of the length of the jaw. There appears to be no trace of the premolar tooth, but the first molar can be recognised by its roots in the jaw, indicating a tooth of about one inch and a half in length. The second molar is much broken, the damage having been done by a pick, but appears one inch and three-quarters long. The third molar is two and a quarter inches in length by about one and a quarter to one and a half inches broad, and the fourth molar is about the same size. These dimensions seem to me to be in very close agreement with those originally given by Sir R. Owen for *Diprotodon australis*, and I therefore identify this jaw as representing his species.

Figures and descriptions of the teeth and other remains of this species may be seen in Sir Richard Owen's work entitled "Researches on the Fossil Remains of the Extinct Mammals of Australia," published in 1877, Plates XIX., XXIII., XXVI., and XXVII., dealing with the above. Sir R. Owen there records *D. australis*, from a gravel bed in the Melbourne District collected by Dr. E. C. Hobson; also from a freshwater deposit in the Province of Victoria, near Melbourne. These localities, however, are so indefinite that they are practically useless.

The present example was found in a tunnel excavation under the Moonee Ponds Creek near Arden-street, North Melbourne, the depth of the tunnel below the present bed of the creek being approximately 25ft., or 35ft. below the surface, the exact spot being indicated on the accompanying plan. The matrix in which the bone was found is a sandy clay of a fawn to brownish colour, containing glassy quartz grains up to one-sixteenth of an inch in diameter—some well rounded, while others are sub-angular—and small flakes of a white mica, apparently muscovite.

The discovery of this specimen in this locality is of special interest and importance on account of its bearing on the

geological age of the marine deposits of the West Melbourne Swamp area. In the extension of this same sewer towards Kensington, at a distance of about 200ft. from where the bone was found, numbers of marine shells were discovered, all of which appear to be recent species, and this close association of these remains seems to warrant the application of PLEISTOCENE for the geological age of the deposits in this area.